

Patent claims

1. A tubular blank for the production of drilling tools, the blank having a forming part (26) that
5 can be formed in a non-cutting manner while thereby forming chip grooves (12) and coolant channels, and the finished drilling tool being able to be fitted with a shaft for clamping in a machine tool and with a drill tip (20) provided with cutting edges,
10 characterized by a clamping part (16) which is arranged at the shaft-side end of the forming part (26), is integrally connected to the latter and the tubular wall thickness of which is greater than in the region of the forming part (26).
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2. The tubular blank as claimed in claim 1, characterized in that the outside tube diameter is greater in the region of the clamping part (16)
20 than in the region of the forming part (26).
3. The tubular blank as claimed in claim 1 or 2, characterized in that the inside tube diameter is equal in the region of the clamping part (16) and the forming part (26).
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4. The tubular blank as claimed in claim 1 or 2, characterized in that the inside tube diameter is smaller or greater in the region of the clamping
30 part (16) than in the region of the forming part (26).
5. The tubular blank as claimed in one of claims 1 to 4, characterized in that a preferably planar clamping area (17) is arranged on the outer side of
35 the clamping part (16).

6. The tubular blank as claimed in claim 5, characterized in that the inside tube diameter is constant over the length of the clamping part (16).
- 5 7. The tubular blank as claimed in claim 5, characterized in that the inside tube diameter varies over the length of the clamping part (16) and is smaller in the region of the clamping area (17) than outside the clamping area (17).
- 10 8. The tubular blank as claimed in one of claims 1 to 7, characterized in that the clamping area (17) runs parallel to the tube axis.
- 15 9. The tubular blank as claimed in one of claims 1 to 7, characterized in that the clamping area (17) is aligned obliquely with respect to the tube axis.
- 20 10. The tubular blank as claimed in one of claims 1 to 9, characterized by a central channel (24), which has an oval or elliptical outline at least over the length of the clamping part (16).
- 25 11. The tubular blank as claimed in claim 10, characterized in that the clamping area (17) is arranged in the region of the smaller inside tube diameter.
- 30 12. The tubular blank as claimed in one of claims 1 to 11, characterized by a central channel which, with a constant outside tube diameter, conically diverges at least over part of the length of the forming part (26) toward the free end.
- 35 13. The tubular blank as claimed in one of claims 1 to 12, characterized in that the transitional portion (32) runs conically on the outside between the clamping part (16) and the forming part (26).

14. The tubular blank as claimed in claim 13,
characterized in that the transitional portion runs
conically on the inside between the clamping part
5 (16) and the forming part (26) in the same
direction as on the outer side.
15. The tubular blank as claimed in one of claims 1 to
14, characterized in that a step-shaped
10 transitional portion (32) is arranged between the
clamping part (16) and the forming part (26).
16. The tubular blank as claimed in one of claims 13 to
15, characterized in that the transitional portion
15 (32) is formed and dimensioned in such a way that
at least one bit seat for receiving a cutting bit
can be formed in it there.
17. The tubular blank as claimed in one of claims 1 to
20 16, characterized in that it consists of a case
hardening steel with a phase transition point of
from 480 to 650°C.
18. The tubular blank as claimed in one of claims 1 to
25 17, characterized in that it consists of a case
hardening steel with a chromium content of less
than 2%, preferably of a 16 MnCr 5 steel.
19. The tubular blank as claimed in claim 17 or 18,
30 characterized in that it is hardened, preferably
carburized or nitrided, at least on its outer
surface, after the forming operation.
20. A method for the production of a tubular blank (22)
35 for the non-cutting forming in the production of
drilling tools, characterized in that a piece of
tube with a constant inside and outside diameter is
subjected to a metal-cutting operation, preferably

drilled or turned on a lathe, on its inner and/or outer surface, while thereby forming a forming part (26) that has a thinner wall than a clamping part (16).

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21. A method for the production of a tubular blank (22) for the non-cutting forming in the production of drilling tools, characterized in that a piece of tube with a constant inside and outside diameter is
- 10 formed, preferably swaged, at least partially over a mandrel from the outside while thereby forming a forming part (26) that has a thinner wall than a clamping part (16).
- 15 22. The method as claimed in claim 20 or 21, characterized in that a clamping area (17) is formed into the outer surface of the clamping part (16) by either a metal-cutting operation or a non-cutting operation.
- 20 23. The use of the tubular blank as claimed in one of claims 1 to 19 for the production of drilling tools, the forming part (26) being formed in a non-cutting manner while thereby forming chip grooves
- 25 (12) and coolant channels (27).
24. The use as claimed in claim 23, characterized in that the forming part (26) is formed by the swaging method.
- 30 25. The use as claimed in claim 23 or 24, characterized in that the coolant channels (27) are formed from the central channel of the clamping part (16) steplessly and seamlessly into the forming part
- 35 (26).
26. The use as claimed in one of claims 23 to 25, characterized in that a clamping shaft for clamping

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into a machine tool is clamped or shrink-fitted on
in the region of the clamping part (16).